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Judging from the holes in the curbs, rafters were numerous; if they all joined a main post the interior of the house must have been rather obstructed by them. The rafters were connected by purlins "reaching along the whole length at two feet distance from each other." They gave strength to the whole structure and supported the thatching. 342

To build a house is *hato*, the term used in other parts of Polynesia for thatching. The Easter Island vocabularies give *hakamanga* for roof. The end of the house was called *pini*. The central ridgepost is said to have had magic in it, though present natives are unable to tell how it was manifest. The different elements of the frame were lashed together with ropes of *hau* bark (*hahau*) and great care was taken that the number of knots used in lashing should be odd, for fear of the bad luck connected with even figures. [80] 342

On Easter Island, wood was a precious and rare material, so when a house had to be abandoned because of fleas, "it was lifted by a dozen men who carried it to another spot, fastening it with poles stuck into the ground" (230, vol. 6, p. 122). 483

Thatching

Roggeveen (186, p. 118) describes the thatching of houses in the following terms: 342

... Then the interstices, which are all of oblong shape, are closed up and covered over with a sort of rush or long grass, which they put on very thickly, layer upon layer, and fasten on the inner side with lashing ... so that they are always as well shut in against wind and rain as those who live beneath thatched roofs in Holland.

According to Tepano, who saw houses of ancient type in his youth, the thatch (*hatunga*) was made of three superimposed layers:

The first was a covering of mats (*moenga*); the second, a layer of sugar-cane leaves (*rou too*); the third, a layer of grass (*manku-ato*). The mats extended on the frame were similar to sleeping mats and were made of rushes (*Scirpus riparius*) sewn together with *hau* cords. The accuracy of this statement is borne out by Bernizet (130, vol. 2, p. 256): "The whole [structure] is covered with rushes of nine or ten lines diameter at the lower end, united together like mats, by threads twisted with the hand." The use of sugar cane is mentioned by G. Forster (83, vol. 1, p. 570), who describes the thatching as composed of "small sticks [purlins], and covered with a neat mat-work of sugar cane leaves, leaned on each row of stakes, forming a very sharp ridge or angle at the top and resting firmly on the ground at the bottom." The word "mat-work" may suggest that the Easter Islanders employed for thatching a method widely known in the rest of Polynesia (Cook Islands, Tahiti, Samoa, etc.) which consisted in covering the house with sheets made by doubling pandanus or sugar-cane leaves over a length of cane and sewing them together with a slender rod or coconut midrib. The threading of the mid-ribs through the leaves is termed *tui* on Mangareva; and the verb *tuitui* means, on Easter Island, to "tie together, bind together." The number of purlins used in the framework is more appropriate for lashing of bundles of leaves and of grass than for the simple covering of sugar-cane sheets. Geiseler (87, p. 39), who did not see houses of the old type but describes them from information received, says that the frame was of *toro-miro* wood and that the intervals between the elements "were interwoven" with dry banana leaves (which he erroneously calls *hau*), then covered with sugar-cane stalks and leaves, and finally with long grass. Zumbohm (230, vol. 6, p. 122) likewise states that the huts were thickly covered with reed, sugar-cane stalks, or other grass so that the rain could not percolate into the interior. Neither description refers to sheets or mats, nor do they stress any differences in the way these layers were put on. My informant asserted that [17]

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near the quarry. The final polishing was done with abrasive volcanic stones called *punga*. Though the amount of work involved was probably less than is generally believed, the two weeks allowed by Routledge for the completion of a statue seems to me too short a time.

Routledge (194, p. 181) suggests that it was never intended to remove many of the statues carved in the quarry. One statue still adhering to the rock is 20 meters long, a size that precludes the possibility of transport. Though the statue is apparently finished, there is no indication of any work to detach it from the ledge of tuff. Another image in the interior of the crater rests on its side with the back overhanging the cliff. It is unlikely that it would have occupied such a position if it was intended to be lowered down. There is further evidence that many of these images were merely rock carvings, "little more than embossed carvings on the face of the rock without surrounding alley-ways" (194, p. 181). Near Anakena we discovered a small stone image on a ledge of basalt. This occupied the same position as the large Rano-raraku images and was probably just a rock carving.

STATUES ON THE AHUS

There are two classes of Easter Island statues—those which still stand in the crater, at the foot of Rano-raraku, or on the plains, and those which once surmounted the ahus or burial places. Though they are made of the same stone and are of the same general style, there are differences which are worth stressing.

The large ahus (p. 284) were all surmounted by *mahi* or busts carved from the soft volcanic tuff of Rano-raraku crater. All these have been pulled down with the exception of the base of a statue on the right wing of ahu Tonga-riki. The number of statues which were erected on the ahu depended on its importance and perhaps on other circumstances which we will never know. Ahu Tonga-riki had 15 statues; ahu Akahanga, 13 statues; ahu Vinapu, 6; and Hanga-o-honu, 5 or perhaps 6. Five statues was the average for ahus of medium size. Te-pito-te-kura, near La Pérouse Bay, and a few others had only one statue. The images rested on large square slabs which still stand on the higher platforms of most of the ahus. The main characteristics of the statues may be defined as follows:

The long head is about three sevenths of the total height of the statue (134, p. 182). The top of the head is flat, the forehead narrow. The back of the head is vertical and, with the straight line of the ears, gives to the head a flattened and square appearance. The eyebrows are well marked and overlap elliptic cavities which represent the sockets of the eyes (pl. 6, 1). The nose is long, the tip slightly upturned and the nostrils expanded. The thin lips of the mouth are pursed, giving the image a scornful expression. The chin has a sharp edge. On both sides the head is framed by conventionalized representations of the ear with elongated lobes. The nipples are sometimes so strongly delineated by the converging surface that the bust has a feminine appearance. When the

TRANSPORTATION OF STONE STATUES

483 Modern natives are unable to explain the methods used by their ancestors
 773 for transporting the stone images. This break in the oral tradition is perhaps
 ancient, for soon after first European contact natives had to resort to legends
 to satisfy those who inquired about the subject. They told Roussel (190, p.
 498) that a chief endowed with power (*mana*) had ordered the statues to
 walk. "Hearing his words, all the statues set out and picked out the places
 which were the most convenient to them." Palmer (171, p. 181), who prob-
 ably heard this legend from Roussel, says that this great chief was Tukuiu
 (Tuu-ko-ihu). According to Zumbohm (230, vol. 6, p. 128) the mythical
 being whose power dispersed the statues from the quarry to the ahus was the
 god Makemake. In a later version (37, p. 29), this achievement is attributed
 to the priests (*ivi-atua*) who moved the statues at the request of those who
 wanted them on their family ahus. The huge blocks walked for a distance
 and then stopped. Each day the priests repeated the charms until the images
 had reached the spot for which they were destined.

483 More technical traditions about transportation are rare. A native called
 Haunoko told Jaussen (115, p. 245) that round boulders were put under the
 images and that the natives pushed, dragged, and rolled them to the place of
 destination. Geiseler (87, p. 12) was shown some holes along the edge of
 Rano-raraku crater in which rope tenders stood while paying out rope as the
 statues slid down hill; they made turns around projecting blocks when the
 statue had to be belayed. The image was dropped into a hole which had been
 dug for it.

[40] Routledge (194, p. 189) noticed many stones behind the statues, evidently
 used when the images were erected. Some statues were left standing at an
 angle. The natives remember that the hats were put on the heads of statues by
 erecting piles of stones against an image and then rolling the cylinders over
 the stones. A similar method was used in placing large stones in Marquesan
 structures (141, p. 8). I was told that levers (*akaue*) were used for trans-
 port and that taro and sweet potatoes were put under the statue for lubri-
 cation.

[171] The weight of the Easter Island images has usually been over-estimated.
 Professor Delacroix, Director of the Laboratory of Geology in Paris, has
 kindly calculated for me the specific weight of the Rano-raraku tuff. The
 density of this rock is 2.48. Taking this figure as a basis, Dr. C. K. Went-
 worth, Associate in Geology at Bishop Museum, has estimated the weight
 of the average statue transported from the quarry to the ahu. Statues 4 or
 5 meters tall weigh at most about 4 or 5 tons. I doubt whether the weight of
 any of the giant statues which stand near the quarry exceeds 30 tons.

[171] Other Polynesians have carried weights as heavy as the Easter Island

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statues. For example, a platform in a dance court of Uahake-kua in the Marquesas includes boulders weighing from 3 to 10 tons (142, p. 7). Two 60-ton vessels, blown inland by a hurricane, were carried back to the sea by Maoris. It is said that one was transported by 2,000 men; the other by only 200. Huge logs for canoes were hauled from the forests by the Maoris; in going down a steep slope the log was lowered slowly by means of ropes (21, pp. 62-73) as in the method described by Geiseler for lowering Easter Island statues down the quarry slopes. The pillars for the famous trilithon on Tonga, weighing between 30 and 40 tons, were quarried near the shore and "were dragged over wooden skids, by means of heavy ropes and the combined muscular power of many men" (147, p. 64).

The transportation of the images on Easter Island was not so difficult in pre-European days as it would be now, for then the long plain extending across the island from Rano-raraku was covered by high, slippery grass, such as now exists on the islet of Motu-nui. Probably statues were rolled on wooden skids as in Tonga. The large size of many wooden implements (*ua, rapa*) indicates that sufficient wood was available for this. The size of some Easter Island nets made of paper mulberry fibers shows that there was no scarcity of material for making long ropes. Moreover the example of the Maori indicates that there was no need for a great many cables to haul a large and heavy mass. The major difficulty in transporting Easter Island images was not the great weight but rather the fragility of the soft tuff. The moving of statues without scarring them is, in my opinion, the greatest achievement of the Easter Islanders. The statues were dragged on their broad, rough backs; any damages could be repaired after the statue was erected. The statues were probably hauled a bit at a time, possibly by a whole tribe working together as in the Marquesas (104, p. 206). This is also the opinion of Roussel (190, p. 498) who writes: "We may believe that on occasion of a feast all the tribes gathered and each one took its family gods and dragged them with hau ropes to their respective districts." The largest images, weighing from 20 to 30 tons, were not carried far from the quarry, but were set up at the foot of the hill. The farther one goes from the quarry the smaller the statues become. This indicates that resourcefulness and man power were limited. Along a rocky portion of the north coast near Hango-teo there are no image ahus, and the only image found there is of basalt carved on the spot.

It has been suggested that the Easter Islanders transported their images on rafts. However, this is absurd, for there was not enough wood on the island for the construction of sufficiently large rafts and the rocky coast near Rano-raraku affords no good landing place. The smaller statues might have been carried on wooden litters, a method much used in the Marquesas (142, p. 10).

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153 That modern natives should have forgotten how the statues were transported is strange but understandable. First, we are not sure how thoroughly they were asked about this problem and second, they have a disconcerting way of forgetting the past. There is not a single native on the island who is able to explain the use of the stone adzes which are daily found on the ground, though these implements were manipulated by their great-grandfathers or even by their grandfathers. Solely because in 1868 the natives could not remember the technique of hauling statues, we must not conclude that the carving and transportation of the images ended many centuries ago. It is possible that only a few generations ago a war exterminated the expert stone carvers at Rano-raraku and thus interrupted the tradition.

SIGNIFICANCE OF STONE STATUES

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[201] The true significance of stone statues is not known. There is no direct evidence that they were ever worshipped. Roggeveen's statement (186, p. 15), so frequently quoted as proof of an ancient cult of the images, is certainly too vague to allow any such conclusion: "... we noticed only that they kindle fire in front of certain remarkably tall stone figures they set up; and thereafter squatting on their heels with heads bowed down, they bring the palms of their hands together and alternately raise and lower them."

The members of the Gonzalez expedition (90, p. 94) noticed that the natives appeared to "hold them [the images] in great veneration," and were "displeased" when the Spaniards approached to examine them closely. However, this fear might have concerned the ahu itself rather than the images. Cook (53, vol. 1, p. 296) collected the names of various statues and heard the natives use the word *ariki* in connection with certain of them. On this association Cook and Forster (83, vol. 1, p. 375) base their opinion that the statues "were monuments erected to the memory of some areekees, or kings."¹⁵

Later inquirers (Palmer, 171, p. 174; Jausen, 115, p. 245) were told the same things by natives raised in the pagan traditions. One of the Easter Islanders kidnapped and sent to Peru assured Gill (89, p. 213) that these statues had not been worshipped within the memory of man. Jausen's informants conveyed to him the impression that these statues were merely to decorate the ahu. The only image that is traditionally connected with a cult is the statue Hoa-haka-nana-ia or Taurarenga now in the British Museum. The image called Pou-haka-nonga (now on exhibition in Belgium under the name Hanga-oneone) of the ahu Ana-koiroroa at the bay of Hanga-roa is supposed to have been put there by some king to indicate to the fishermen the best place to catch tuna. Several statues were pointed out to Routledge (194, p. 193) as landmarks indicating boundaries.

¹⁵ Transcribed phonetically the names collected by Cook and Forster are: Ko Tomoara, Marapae, Kanaro, Ko Uaituku, Matamata. The only names of statues recorded by present natives are: Hanga, Vaha, Titike, Kere-mata-pea-ha-ngaro-ki-hiva.

172 flattened appearance. The eyebrows are well marked and overlap the
 532 elliptical cavities which represent the sockets of the eyes. The nose is
 744 long, the tip slightly upturned and the nostrils expanded. The thin
 lips are pursed with what seems a scornful expression. The arms,
 slightly flexed, cling to the bust with the hands joined over the ab-
 domen, below which the figure is cut off.

172 The other sculptures on the island—the lonely images on the plain
 532 and those that guard the slope of the volcano Ranoararaku—have the
 same features except that there are no sockets for the eyes. This part
 of the face, as in some modernistic sculpture, is defined only by the
 ridge of the eyebrows and by the flat plane of the cheeks below. The
 lower part of these statues tapers to an enormous peg, which was
 sunk into the soil.

171 The function of the *ahu* images can be surmised from analogies with
 532 the rest of Polynesia. The old Marquesans, close relatives and perhaps
 718 forebears of the Easter Islanders, adorned their stone platforms with
 statues which represented their ancestors. Among all the natives of
 central and marginal Polynesia, there is the same tendency to give
 human form to ancestral gods presiding over the sacred places. In
 the sanctuaries of central Polynesia stood huge slabs that were erected
 in the same position as the Easter Island statues. These slabs were
 receptacles for the souls of the ancestral gods, who entered them when
 they were called by the priests. The Easter Island statues are merely
 a more realistic development of this idea, favored by the existence of
 easily carved tufa deposits. Their sculptors elaborated rather than
 originated a tradition.

172 Everywhere on the island statues are to be found: on top of volcanic
 532 hills, along cliffs, and in places which seem almost inaccessible. Their
 mass must have made their transportation difficult. As a matter of
 fact, no one has yet explained how some of them were hauled from the
 quarry and then erected on the platforms on the opposite side of the
 island.

• 483 Of course, there are many other instances of people with rudimentary
 equipment moving objects of great size—for instance, the dolmens and
 menhirs of Europe. As the statues that the Easter Islanders
 erected on their sanctuaries were of the native tufa, they were not ex-
 [532] ceedingly heavy for their bulk. Their weight ranges from 5 to 8 tons;
 only one weighs as much as 20 tons. But because the rock from which
 they were carved is soft, it must have been necessary to take innumera-
 ble precautions not to mar or break them in transit. This would
 have been easy if abundant supplies of wood had been accessible,
 but, except for a few bushes, the island seems always to have
 lacked wood. Good material for making ropes was apparently also
 lacking. The only thing they could have been made from is paper

mulberry, which the natives grew in special stone-enclosed plots. Perhaps the wood necessary for making sledges on which the statues might have been hauled was lumber that floated ashore. This is frequently mentioned in ancient tales. If native timber or driftwood was available in the old days, the difficulties of transportation would not have been overwhelming. We know that other Polynesians transported objects quite as heavy as the Easter Island images. For instance in the Marquesas, slabs weighing as much as 10 tons were hauled along the slopes of the mountains. The famous doorway, or trilithon, of Tonga, which is one of the marvels of the world, has a lintel weighing 30 tons. But when the Easter Islanders of today are asked about the means by which the statues were transported, they only say: "King Tuu-ko-ihu, the great magician, used to move them with the words of his mouth." [171]

Other questions have arisen about the Easter Island carvings. How, for instance, did the people get the manpower for such large enterprises, which would have been impossible, it seems, if the population were as small as it is today? The answer is that before the Europeans arrived, the island had ten times as many inhabitants as it now has—4 or 5 thousand would be a conservative estimate. We know this from data given by its first European visitors and the early missionaries. [61]

Again, are these statues as old as has been said? Certain writers have dated them as far back as 1000 B. C. There are even some who think that they might have been in existence 10,000 years ago. But the weight of general evidence is against these views. Although their material is a relatively soft stone, they still retain sharp outlines, and the hammer marks are still noticeable on them. As the winds blow with relentless force over the island, and rains are both frequent and violent, if the carving had been done thousands of years ago, it could not be in such good condition as it is today. Tradition seems to indicate that the Polynesian ancestors of the present inhabitants came to the island and settled it in the twelfth and thirteenth centuries A. D. All things considered, I do not think the statues can be more than five or six centuries old. But no definite date can be set for them. [173]

The figures of stone that stood so high above the shores of Easter Island, and in such striking formation that it is no wonder they amazed the old navigators, have attracted more attention than the other mysterious objects to which I have already referred—the wooden tablets with rows of strange signs incised on them. But these curious pieces of wood have also given rise to much speculation. They were bought from the natives by the missionaries in the early days of their work, and ever since they have been thought to contain a real script which, if it could be read, would prove a key to the island's mysteries. [212] [114]

The first white man to discover the tablets was Monseigneur Jaussen, French Bishop of Tahiti, in 1866. As he was looking at a piece of

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visited by any of the early voyagers, and we therefore ask in vain whether 138
work was or was not being continued in it when their ships lay so near
it. For three-fourths of its circumference the wall which surrounds the
crater is symmetrical; it slopes with an even gradient on the outside to
the surrounding plain and on the inside to the interior lake, while
several carriages could be driven abreast along the blunt crest. The fourth
part of the wall, that nearest the sea, is however radically different. It is
higher than the remainder, rising to about 500 feet, and on the outside has a
vertical wall of rock with a steep bank of detritus at its foot. A gap in the
western side forms the easiest approach to the crater. It is either artificial
or is a natural gap enlarged. The quarries are on the south-west portion
of the mountain, which consists here of compressed volcanic ash which
encloses numerous lapilli of metamorphic rock. It was this composition
which gave to the early voyagers the impression that the rock was artificial.
This stone has been worked both inside the crater and on the outer slope. 532
In the quarries the statues may be seen not by units but by scores at
every stage of completion, left precisely as they were when the work was
stopped and the workmen laid down their tools. A large figure catches
the eye, and on a shelf above is another nearly completed. As the visitor
gazes the walls on either side transform themselves into partially finished
giants, and a glance downwards shows that his foot is resting on a
mighty face. In the early morning or as the sun goes down the silent
figures seem like effigies of the mighty dead, and the place to be alive with
the spirits of those who made them. There are in all about 150 partially
finished statues. A diagram was made on which the position of every
one was shown, and each was measured and described. This large number
of statues in the quarry itself is very interesting and requires explanation.
Some have evidently been abandoned owing to a flaw in the stone or
for some other technical reason; but the question naturally arises whether
they were all intended to be removed. More than once when at first
evidence pointed to a figure or group of figures being designed to remain
in their position, a similar neighbour has been found undercut, or an empty
niche next door from which one has obviously been taken away. At the
same time it seems fairly clear that some were rock-carvings only. The
largest in the quarry, for example, measures 68 feet in length as against
the 33 feet of the largest found outside. It seems difficult to suppose
that the removal of this was even projected.

It is easy to trace the stages by which the images were completed and 532
removed. Around a figure is a gangway in which the workers have stood, 483 ●
and frequently the standing place of each man can be seen, so that we
know how many were at work on each side. The figure was chiselled out
lying on its back, and it was then undercut till it assumed the form of a
boat on its keel. The keel was then cut away and it was supported by
stones. One statue can be seen actually in process of removal from its
niche, and it has either been fractured in the process or else has been

532 abandoned in transport and has since broken in two. It has been taken
 483 from a higher niche, and is being moved over two or three vacant ones
 across which it lies. The probable method of such removal would be to
 erect a causeway or bank of earth across such inequalities, and if the statue
 were abandoned while resting on this, it would break by its own weight as
 the earth was gradually washed away. We were able to find the tools with
 412 which these statues were made; they had not previously been recognized
 although they lie around in abundance. They are of the same material as
 the lapilli in the rock of which the images are formed. In the parts of the
 quarries which are sheltered from weather the chisel marks are as clear as
 if the work had been done but yesterday.

532 In the detritus below the quarries a large number of figures have been
 set up. They all stand with their backs to the mountain; those on the
 outside look along the coast to the south-west, those on the inside over
 the crater lake to the north. Many of the statues have been buried by
 falls of loose material from the cliff wall behind and above them, and in
 some cases only the face or top of the head is visible. We excavated
 either wholly or in part some twenty to thirty of these figures. It was
 found that they had originally been set into the earth to about the height
 of the elbow. In some cases the diggers in making the hole had come
 across a rock, which they had carefully cut away to take the image. But
 though the lower part of the figure must thus always have been hidden,
 it is fully finished with the hands perfectly made. Excavation also revealed
 a design on the back of some of the images. This can be traced on the one
 now in the British Museum which when on the island was kept in a stone
 house; but it has been obliterated by weather from those on the terraces,
 only slight traces remaining. It consists of a threefold belt, which has
 a pattern below it, and is surmounted by a ring or sometimes by two rings.

It was clear that these statues had been intended to remain in the holes,
 for the base is sometimes found narrowed down and almost wedge-shaped,
 whereas with the images which have stood on the terraces the bottom
 expands. This contradicts the theory that the figures were placed
 temporarily on the mountain and were subsequently to be removed to the
 terraces. In one or two cases excavation was made to a lower level than
 the base of a statue, and it was proved that they have had no sort of
 foundation or pedestal, nor was there anything in the way of burial to be
 traced below.

In one case and one only a burial was found, at the back of a statue at
 above the level of the rings. In a few other cases there were isolated
 bones. These burials seem, however, to be comparatively recent and not
 originally connected with the statues. At the time of a great small-pox
 epidemic corpses were deposited any and everywhere.

A few carvings were found on the figures, and the back of one statue
 is covered with them, but they apparently are also more recent than the
 images and are of very inferior workmanship to the rings and belt.

15:Routledge E-5 (1914-1915) 1919
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FIG. 50.

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STATUE IN QUARRY.

Attached to rock by "keel" only. Top of head (flat surface) towards spectator.
[No. 61. Fig. 60.]

FIG. 51

[483]



STATUE IN QUARRY.

Ready to be launched ; movement prevented by stone wedges. Base towards spectator.
[No. 57. Fig. 60.]

[179]

[facing p. 179]

THE QUARRIES

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less steeply to the crater-lake, on the other a stone thrown down would reach the foot of the precipice; the view extends from sea to sea. (Over all the most absolute stillness reigns.)

The statues in the quarries number altogether over 150. Amongst this mass of material there is no difficulty in tracing the course of the work. The surface of the rock, which will form the figure, has generally been laid bare before work upon it began, but occasionally the image was wrought lying partially under a canopy (fig. 49). In a few cases the stone has been roughed out into preliminary blocks (no. 58, fig. 60) but this procedure is not universal, and seems to have been followed only where there was some doubt as to the quality of the material. When this was not the case the face and anterior aspect of the statue were first carved, and the block gradually became isolated as the material was removed in forming the head, base, and sides. A gutter or alley-way was thus made round the image (fig. 55), in which the niches where each man has stood or squatted to his work can be clearly seen; it is, therefore, possible to count how many were at work at each side of a figure.

When the front and sides were completed down to every detail of the hands, the undercutting commenced. The rock beneath was chipped away by degrees till the statue rested only on a narrow strip of stone running along the spine; those which have been left at this stage resemble precisely a boat on its keel, the back being curved in the same way as a ship's bottom (fig. 50). In the next stage shown the figure is completely detached from the rock, and chocked up by stones, looking as if an inadvertent touch would send it sliding down the hill into the plain below (fig. 51). In one instance the moving has evidently begun, the image having been shifted out of the straight. In another very interesting case the work has been abandoned when the statue was in the middle of its descent; it has been carved in a horizontal position in the highest part of the quarry, where its empty niche is visible, it has then been slewed round and was being launched, base forward, across some other empty niches at a lower level. The bottom now rests on the floor of the quarry, and the figure, which has broken in half, is supported in a standing fashion against the outer edge of the vacated shelves. The first impression was that it had met with an accident in transit, and

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PREHISTORIC REMAINS

316 been abandoned; but it is at least equally possible that for the
 ●483 purpose of bringing it down, a bank or causeway of earth had
 been built up to level the inequalities of the descent, and that it
 was resting on this when the work came to an end; the soil
 would then in time be washed away, and the figure fracture
 through loss of support.

316 In the quarry which is shown in fig. 34, the finished head
 can be seen lying across the opening, the body is missing, pre-
 sumably broken off and buried; the bottom of the keel on which
 the figure at one time rested can be clearly traced in a projecting
 line of rock down the middle of its old bed, also the different

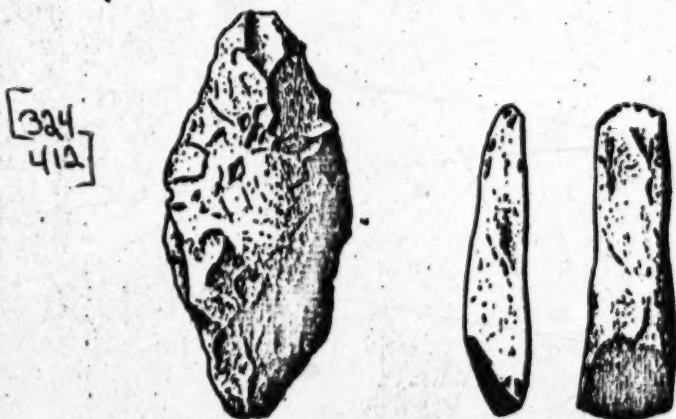


FIG. 32. STONE TOOLS (Tah). FIG. 33. H. Balfour del.

sections where the various men employed have chipped away
 the stone in undermining the statue. In the quarry wall the
 niches occupied by the sculptors are also visible, at more than
 one level, the higher ones being discarded when the upper
 portion of the work was finished and a lower station needed.
 The hand of the standing boy in fig. 31 rests on a small platform
 similarly abandoned.

316 The tools were found with which the work has been done. One
 324 type of these can be seen lying about in great abundance (fig. 32).
 412 They are of the same material as the lapilli in the statues, and
 made by flaking. Some specimens are pointed at both ends,

ERECTION OF STATUES

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the concealed portions. In one case the left hand was correctly modelled, but the right was not even indicated beyond the wrist (fig. 63). The statue shown in the frontispiece, which rejoices in the name of Piro-piro, meaning "bad odour,"¹ stands at the foot of the slope, and appears to remain as it was set up without further burial. It is a well-made figure, probably one of the most recent, and the upper part of the back is carefully moulded, but on digging it out it was found that the bottom had not been finished, but left in the form of a rough excrescence of stone; there was no ring, but a girdle had been carved on the protruding portion, so that this was not intended to be removed. In another instance a large head had fallen on a slope at such an angle that it was impossible to locate the position of the body; curiosity led to investigation, when it was found that the thing was a fraud, the magnificent head being attached to a little dwarf trunk, which must have been buried originally nearly to the neck to keep the top upright. These instances of "jerry-building" confirm our impression that at any rate a large number of the statues were intended to remain *in situ*.)

Indications were found of two different methods of erection, and the mode may have been determined by the nature of the ground. By the first procedure the statue seems to have been placed on its face in the desired spot, and a hole to have been dug beneath the base. The other method was to undermine the base, with the statue lying face uppermost; in several instances a number of large stones were found behind the back of the figure, evidently having been used to wedge it while it was dragged to the vertical. The upright position had sometimes been only partially attained; one statue was still in a slanting attitude, corresponding exactly to the slope of a hard clay wall behind it; the interval between the two, varying from three yards to eighteen inches, had been packed with sub-angular boulders which weighed about one hundredweight, or as much as a man could lift (fig. 69).

A few of the figures bear incised markings rudely, and apparently promiscuously, carved. This was first noted in the case of one of two statues which stand together nearest to the entrance of the crater; here it has been found possible to work the rock at a low level, and in the empty quarry, from which they no

¹ The farthest outstanding figure to the left in fig. 46.

ANCIENT ROADS

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pass in the western line of cones; the other continues as far as a more southerly pass in the same succession of heights. In each pass there is a statue. 172
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The third road, which runs from Raraku in a northerly direction, is much shorter than those to the south and west. It has only four statues covering a distance of perhaps a mile, and it then disappears; if, however, the figures round the base of the mountain belonged to it, and they lie in the same direction, it started from the southern corner of the mountain, led in front of the standing statues and across the trail from the crater, before taking its northward route up the eastern plain. The furthest of the images is the largest which has been moved; it lies on its back, badly broken, but the total of the fragments gives a height of thirty-six feet four inches. In addition to these three avenues, there are indications that some of the statues on the south-eastern side of Raraku may have been on a fourth road along that side beneath the cliff.

So far the matter was sufficiently clear, but another problem was still unsolved: if the images were really being moved to their respective ahu all round the coast, how was it that, with very few exceptions, they were all found in the neighbourhood of Raraku? If also they were being moved, what was the method pursued, for some lay on their backs and some on their faces? With the hope of elucidating this great question of the means of transport, we dug under and near one or two of the single figures without achieving our end—nothing was found; but the close study which the work necessitated called attention to the fact that on one of them the lines of weathering could not have been made with the figure in its present horizontal attitude. The rain had evidently collected on the head and run down the back; it must therefore have stood for a considerable time in a vertical position. It was again a noticeable fact that, though some single figures are lying unbroken (fig. 75), others, like the large one on the north road, proved to be so shattered that no amount of normal disintegration or shifting of soil could account for their condition—they had obviously fallen. So wedded, however, were we at this time to the theory that they were in course of transport, that it was seriously considered whether they could have been moved in an upright position. The point was settled by finding one day by the side of the track, some two miles from the 172
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172 mountain, a partially buried head. This was excavated, and a
 483 statue found that had been originally set up in a hole and, later,
 491 undermined, causing it to fall forward. This was the only
 instance of an isolated figure where the burial had been to any
 depth, but in various other cases it was then seen that soil had
 been removed from the base, and one or two more of the figures
 had not quite fallen (fig. 76).

When the whole number of the statues on the roads were
 in imagination re-erected, it was found that they had all

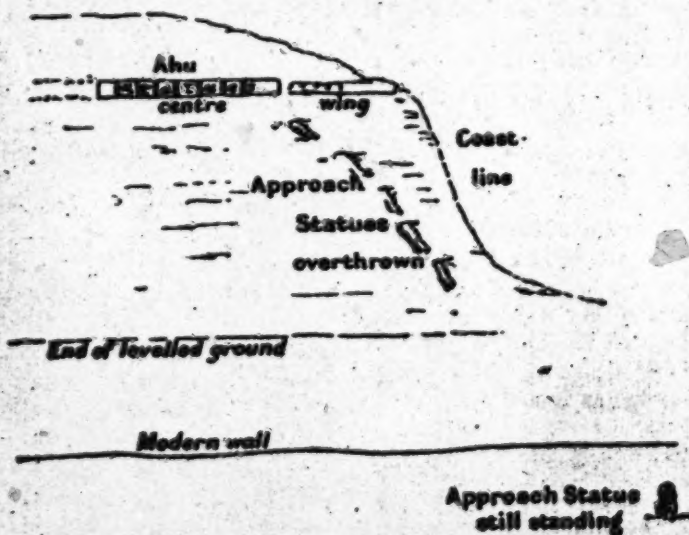


FIG. 77.—DIAGRAM SHOWING CEREMONIAL AVENUE OF AHU HANGA PAUKURA.

originally stood with their backs to the hill. Rano Raraku was, therefore, approached by at least three magnificent avenues, on each of which the pilgrim was greeted at intervals by a stone giant guarding the way to the sacred mountain (map of roads). One of the ahu on the south coast, Hanga Paukura, has been approached by a similar avenue of five statues facing the visitor. These five images when first seen were a great puzzle, as some of them are so embedded in the earth that their backs are even with the levelled sward in front of the ahu; later

METHODS OF TRANSPORT

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there seemed little doubt that, like the two giants on the south-east side of Raraku, trenches had been dug into which they had fallen. Subsequently, a sixth statue was discovered, the other side of a modern wall, weathered and worn away, but of Raraku stone and still upright. This is the only instance of an erect figure to be found elsewhere than on the mountain (fig. 77).

In addition to the images which have stood in these processional roads, there are, excluding one or two figures near the mountain whose *raison d'être* is somewhat doubtful, fourteen isolated statues in various parts of the island, for whose position no certain reason could be found. Some of these may have belonged to inland ahu which have disappeared, or they may be solitary memorials to mark some particular spots, but the greater number appear to have stood near tracks of some sort. Some of these last may have been boundary stones, and in this class may perhaps fall the smaller statue now at the British Museum, which is a very inferior specimen. According to local information it stood almost half-way on the track leading from Vinapu to Mataveru along the bottom of Rano Kao; the hole from which it was dug was pointed out, and our informant declared that he remembered it standing, and that the people used to dance round it. The larger figure at the British Museum was in a unique position, which will be spoken of later.

No statues were, therefore, found of which it could be said that they were in process of being removed, and the mode of transport remains a mystery. An image could be moved down from the quarry by means of banks of earth, and though requiring labour and skill, the process is not inconceivable. Similarly, the figures may have been, and probably were, erected on the terraces in the same way, being hauled up on an embankment of earth made higher than the pedestals and then dropped on them. Near Paro, the ahu where the last statue was overthrown, there is a hillock, and tradition says that a causeway was made from it to the head of the tall figure which stood upon the ahu; and along this the hat was rolled (fig. 78)—a piece of lore which seems hardly likely to have been invented by a race having no connection with the statues. But the problem remains, how was the transport carried out along the level? The weight of some amounted to as much as 40 or 50 tons. It would simplify matters very much if there were any reason to suppose that the

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172 images were moved, as was the case with the hats, before being
 wrought, merely as cylinders of stone, in which case it would be
 possible to pass a rope under and over it, thus parbuckling the
 stone or rolling it along, but the evidence is all to the contrary.
 There is no trace whatever of an unfinished image on or near an
 ahu, while, as we have seen, they are found at all stages in the
 quarry. Presumably rollers were employed, but there appears
 never to have been much wood, or material for cordage, in the
 island, and it is not easy to see how sufficient men could bring
 strength to bear on the block. Even if the ceremonial roads
 were used when possible, these fragile figures have been taken
 to many distant ahu, up hill and down dale, over rough and stony
 ground, where there is no trace of any road at all.

The natives are sometimes prepared to state that the statues
 were thrown down by human means, they never have any
 doubt that they were moved by supernatural power. We were
 once inspecting an ahu built on a natural eminence, one side
 was sheer cliff, the other was a slope of 29 feet, as steep as a
 house roof, near the top a statue was lying. The most intelli-
 gent of our guides turned to me significantly. "Do you mean
 to tell me," he said, "that that was not done by *mana*?"
 The darkness is not rendered less tantalising by the reflection
 that could centuries roll away and the old scenes be again
 enacted before us, the workers would doubtless exclaim in
 bewildered surprise at our ignorance, "But how could you do it
 any other way?"

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 491 Besides the ceremonial roads and their continuations, there
 are traces of an altogether different track which is said to run
 round the whole seaboard of the island. It is considered to be
 supernatural work, and is known as Ara Mahiva, "ara" meaning
 road and "Mahiva" being the name of the spirit or deity who made
 it. On the southern side it has been obliterated in making the
 present track—it was there termed the "path for carrying fish";
 but on the northern and western coasts, where for much of the
 way it runs on the top of high cliffs, such a use is out of the
 question. It can be frequently seen there like a long persistent
 furrow, and where its course has been interrupted by erosion,
 no fresh track had been made further inland; it terminates
 suddenly on the broken edge, and resumes its course on the other
 side. It is best seen in certain lights running up both the western